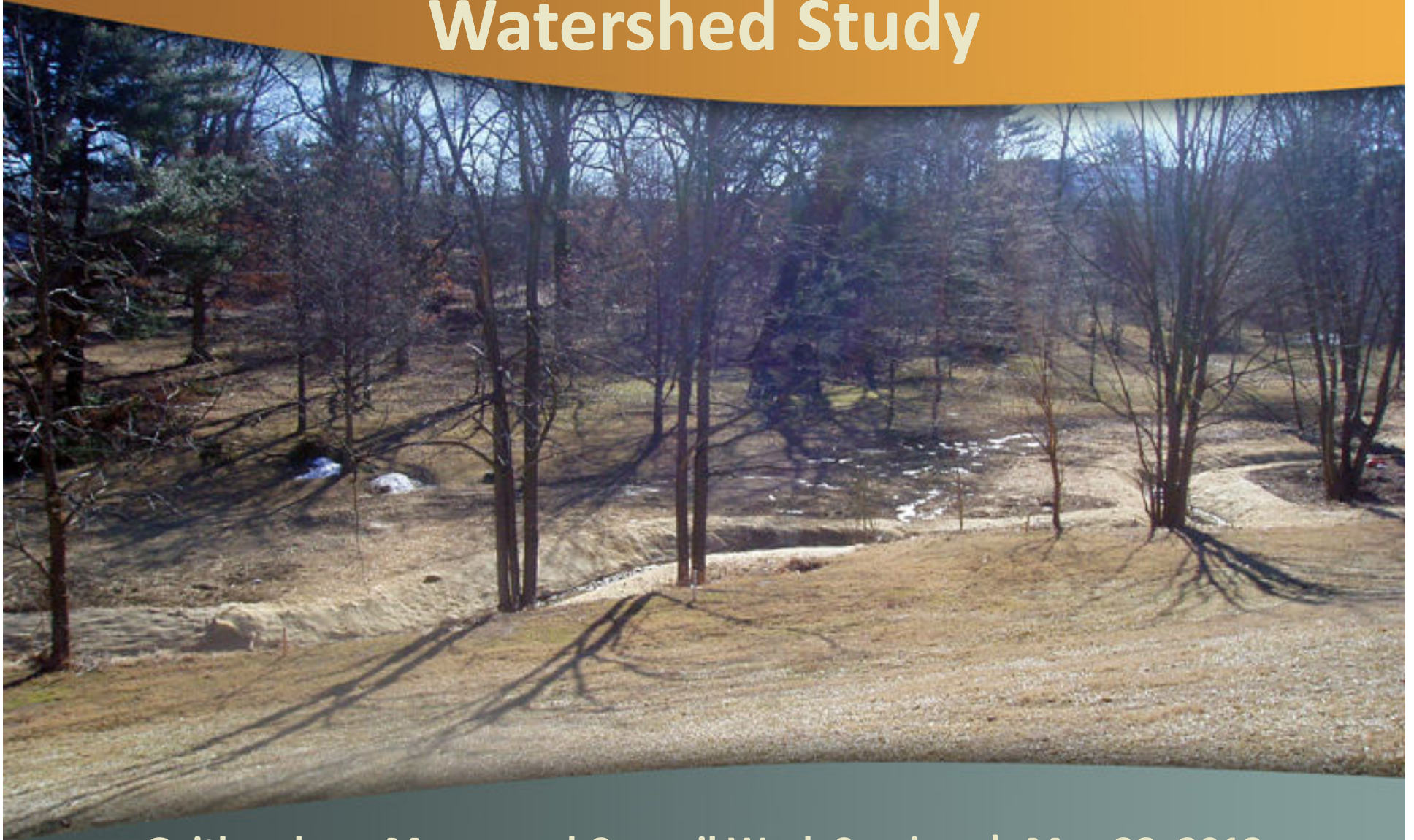


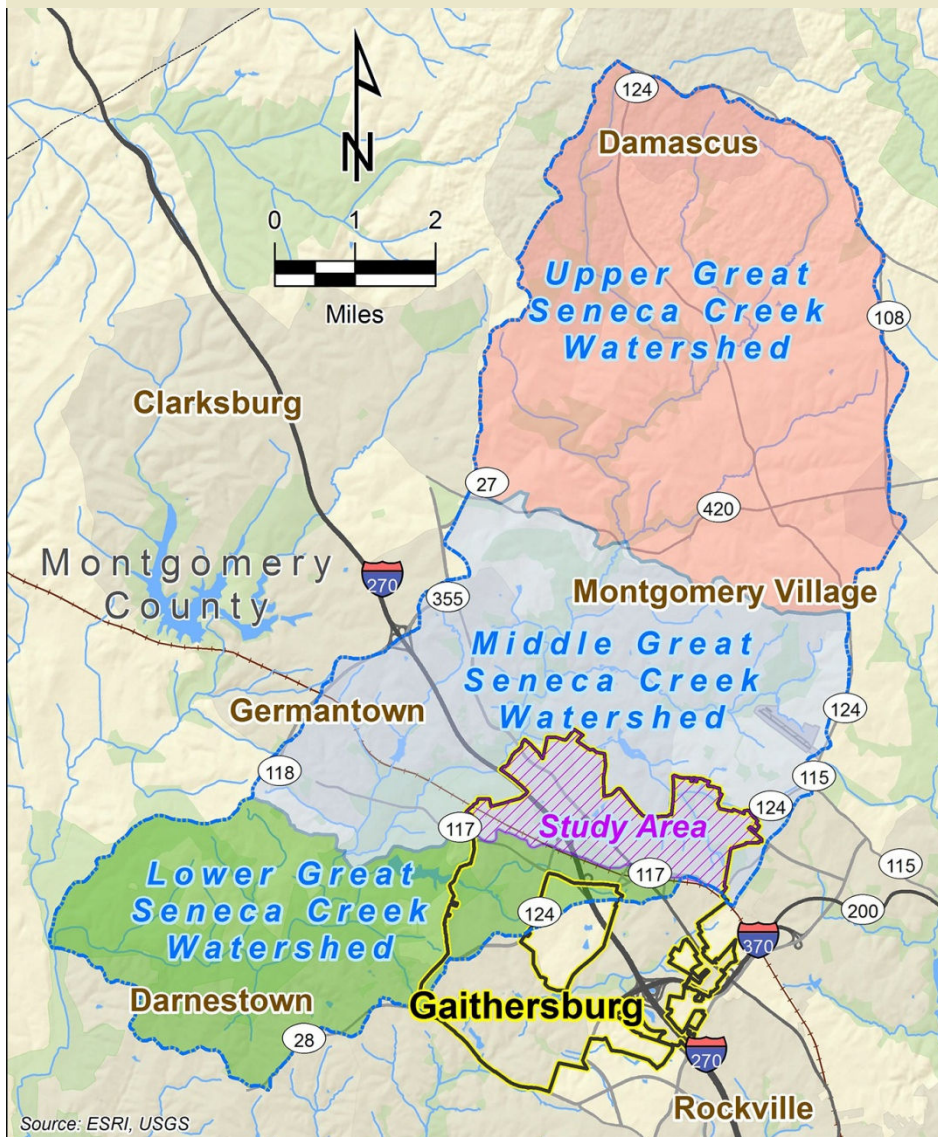
# Middle Great Seneca Creek Watershed Study



Gaithersburg Mayor and Council Work Session | May 28, 2013



# Tonight's Discussion



Overview of the Middle Great Seneca Creek Watershed Study



Preliminary Findings



Potential Improvements



Benefits



Upcoming Tasks

# History / Regulatory Requirements

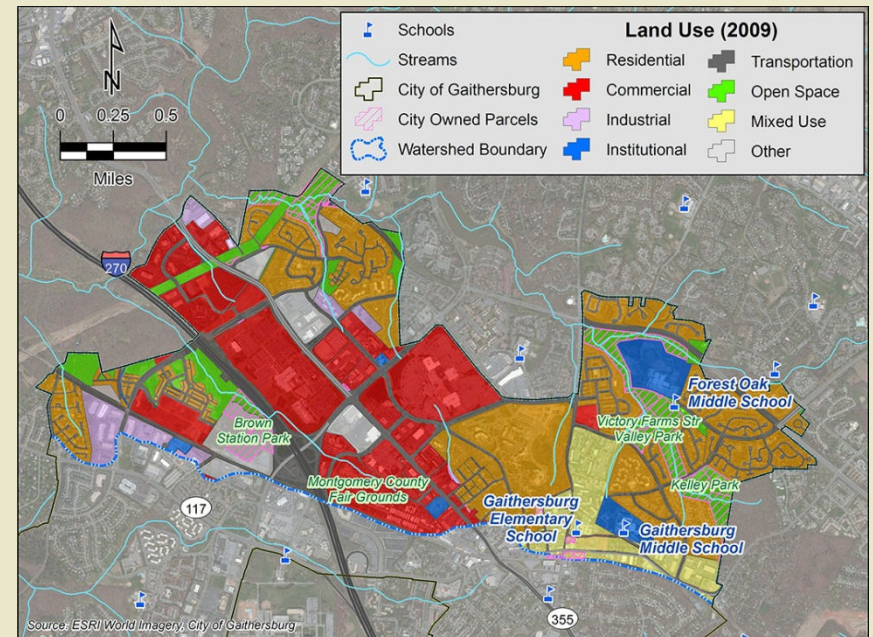
## Regulatory Requirements:

- EPA Clean Water Act
- National Pollutant Discharge Elimination System (NPDES) Permit
- Chesapeake Bay Total Maximum Daily Load (TMDL)
- MDE and Montgomery County Watershed Implementation Plans (WIPs)
- Seneca and Potomac River TMDLs

# Middle Great Seneca Creek Watershed

Middle Great Seneca Creek Watershed includes:

- ▶ Residential neighborhoods
- ▶ Montgomery County Fairgrounds
- ▶ Portions of I-270 and Route 355
- ▶ Lakeforest Mall
- ▶ Commercial and industrial areas



**City streams drain to Potomac River  
and Chesapeake Bay**



# City Watershed Planning

**Watershed plans are conducted to:**

- ▶ **Meet regulatory requirements**
- ▶ **Assess current conditions**
- ▶ **Compare to conditions found in previous studies**
- ▶ **Identify potential watershed improvements**
- ▶ **Develop a preliminary cost estimate for budget planning**
- ▶ **Prioritize and implement improvements**
- ▶ **Evaluate the needs of all stakeholders**



# Watershed Study Goals

- Comply with regulatory requirements
- Improve water quality
- Reduce runoff from rain events
- Repair troubled areas
- Prevent degradation of streams
- Stabilize streams
- Improve overall watershed health



# Preliminary Findings

- High impervious area
- Limited opportunities for new SWM
- Some opportunities to retrofit existing facilities
- Maintenance and repair of some facilities are needed
- No observed problems with illicit discharges
- Few hotspots
- Erosion, downcutting and overwidening in streams
- Poor aquatic habitat
- Storm drain outfall failures





# So what do we do about these issues?

Watershed management is evolving


- ▶ Not just in Gaithersburg
- ▶ Not only focusing on Capital Improvement Projects
- ▶ Other alternatives are needed



**The City can't do it alone!**



# Potential Solutions

- 
- **Traditional Capital Improvement Projects (CIPs) such as SWM retrofits and stream restoration**
  - **Innovative or small scale solutions**
  - **Source control/pollution prevention strategies**
  - **Operational or behavioral changes**
  - **Coordination with other jurisdictions**
  - **Expand public outreach and education**

# Stormwater Management Concepts

## Things we considered:

- Cost vs. benefits
- Available open space
- Drainage area
- Nearby utilities
- Environmental impacts
- Access
- Property owners
- Maintenance responsibility







## Example Sites





# Examples



**Before**



**After**





# Residential Retrofit Visual





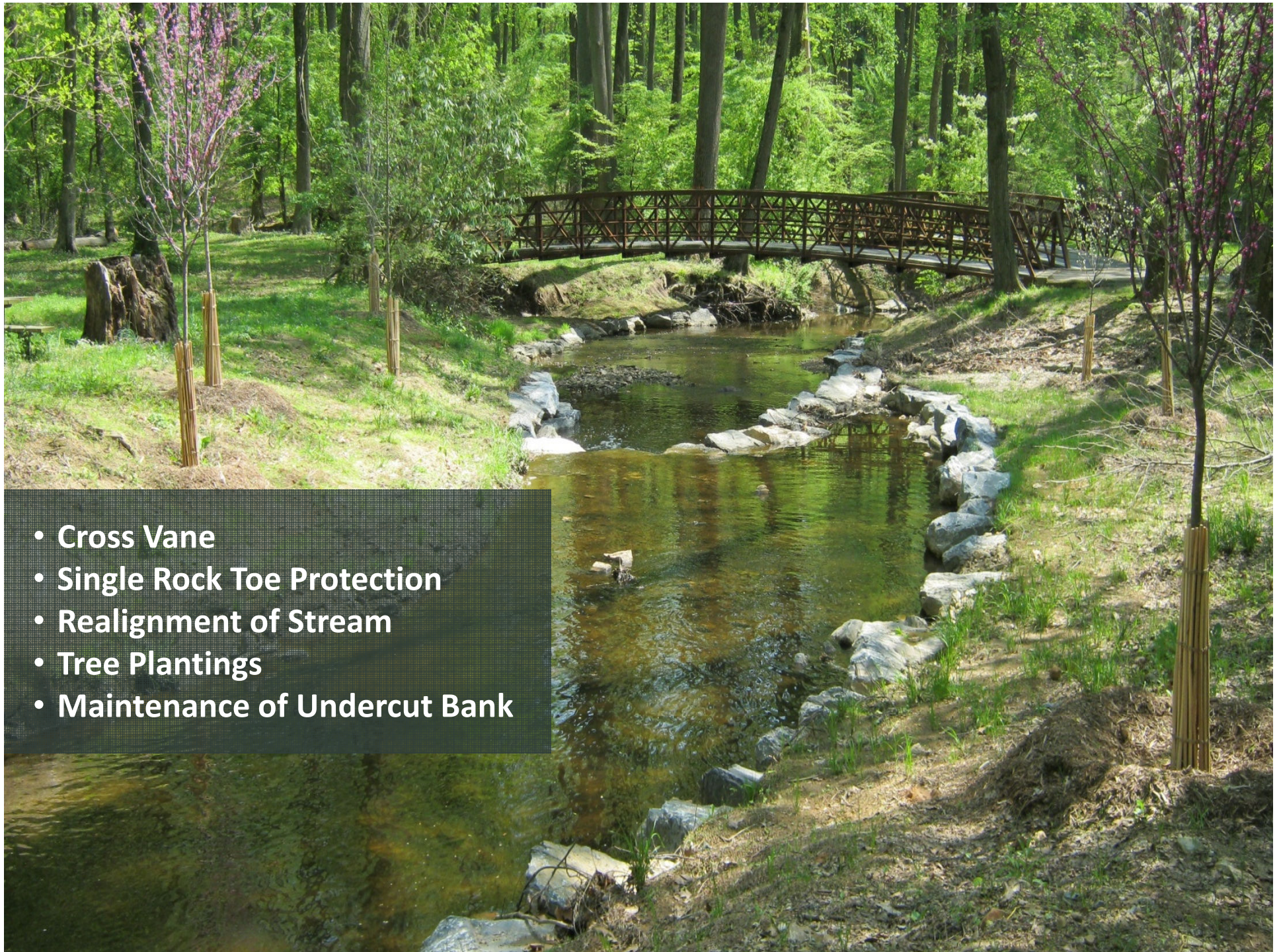
# Stream Restoration Concepts

## Things we considered:

- Cost vs. benefits
- Environmental impacts
- Nearby sewer lines
- Access
- Future development
- Nearby SWM







- Cross Vane
- Single Rock Toe Protection
- Realignment of Stream
- Tree Plantings
- Maintenance of Undercut Bank



# Innovative Alternatives

- Green streets
- Rain barrels
- Rain gardens
- Conservation landscaping
- Tree planting
- Tree boxes
- Permeable paving
- Rooftop disconnection
- Expand Rainscapes program





# Operational Strategies

- Citywide management plans
- Pollutant source controls
- Maintenance practices
- Public education strategies
- Targeted outreach
- Volunteer opportunities




# Potential Challenges

- **Property ownership of existing SWM**
- **Lack of sites for future SWM**
- **Maintenance of private or HOA facilities**
- **Funding**



# What's Next?

- 
- ✓ Final Report completed in June 2013
  - ✓ New MS4 permit expected from MDE
  - ✓ Prioritizing recommendations
  - ✓ Budgeting and funding
  - ✓ Implementing projects
  - ✓ Tracking improvements



# Questions?

